

State of West Virginia
Department of Environmental Protection - Office of Oil and Gas
Well Operator's Report of Well Work

API 47-061-01680 County Monongalia District Clay
Quad Blacksville, WV Pad Name Coastal Field/Pool Name Blacksville
Farm name Coastal Forest Resources Company Well Number 8H
Operator (as registered with the OOG) Northeast Natural Energy LLC
Address 707 Virginia St. Suite 1200 City Charleston State WV Zip 25301

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 4395372.6 Easting 568185.8
Landing Point of Curve Northing 4394937.2 Easting 567885.7
Bottom Hole Northing 4393143.1 Easting 569271.6

Elevation (ft) 1,420' GL Type of Well New Existing Type of Report Interim Final
Permit Type Deviated Horizontal Horizontal 6A Vertical Depth Type Deep Shallow
Type of Operation Convert Deepen Drill Plug Back Redrilling Rework Stimulate
Well Type Brine Disposal CBM Gas Oil Secondary Recovery Solution Mining Storage Other _____
Type of Completion Single Multiple Fluids Produced Brine Gas NGL Oil Other _____
Drilled with Cable Rotary

Drilling Media Surface hole Air Mud Fresh Water Intermediate hole Air Mud Fresh Water Brine
Production hole Air Mud Fresh Water Brine

Mud Type(s) and Additive(s)
Synthetic Based Mud for Horizontal Section; BIO-BASE 365, CALCIUM CHLORIDE POWDER, G-SEAL PLUS, HRP, LIME, M-I WATE (BARITE), M-I-X II MEDIUM,
MEGADRIL P SYSTEM, MEGADRIL P SYSTEM RENTAL, MEGAMUL, SAFE-CARB 250, VERSATHIN HF, VERSAWET, VG-PLUS, VINSEAL MEDIUM, WALNUT NUT PLUG MEDIUM

Date permit issued 07/25/2014 Date drilling commenced 11/8/2014 Date drilling ceased 3/23/2015
Date completion activities began 6/26/2015 Date completion activities ceased 7/9/2015
Verbal plugging (Y/N) _____ Date permission granted _____ Granted by _____

Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug

Freshwater depth(s) ft 1,243' Open mine(s) (Y/N) depths N
Salt water depth(s) ft 2,510' Void(s) encountered (Y/N) depths N
Coal depth(s) ft 600', 1,200' Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

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Reviewed by:
JR
10/30/2015

API 47-061 - 01680 Farm name Coastal Forest Resources Company Well number 8H

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade w/ft	Basket Depth(s)	Did cement circulate (Y/ N) * Provide details below*
Conductor	30	24	50'	N	N/A	N/A	Y to surface
Surface	17.5	13 3/8	1,390	N	54.5	N/A	Y 60 bbls
Coal							
Intermediate 1	12.25	9 5/8	2,762'	N	40	N/A	Y 25 bbls
Intermediate 2							
Intermediate 3							
Production	8.5	5 1/2	16,512'	N	20	N/A	Y top 2000'
Tubing							
Packer type and depth set							

Comment Details _____

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft ³ /sks)	Volume (ft ³)	Cement Top (MD)	WOC (hrs)
Conductor	4,500 psi ready mix	36.4		.75	27.27	CTS	48
Surface	Class A	1,202	15.2	1.27	1,271	CTS	8
Coal							
Intermediate 1	Class A	883	15.2	1.26	1,074	CTS	8
Intermediate 2							
Intermediate 3							
Production	50/90 Premium NE - 1.5% R-1.3% MPA 17C	3,177	14.5	1.17	2,661	Estimated 2,000'	48
Tubing							

Drillers TD (ft) 16,520' Loggers TD (ft) 16,495'

Deepest formation penetrated Marcellus Plug back to (ft) N/A

Plug back procedure _____

Kick off depth (ft) 5,989'

Check all wireline logs run caliper density deviated/directional induction
 neutron resistivity gamma ray temperature sonic

Well cored Yes No Conventional Sidewall Were cuttings collected Yes No

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING _____

Surface: bow spring centralizers every 3rd joint or aprox 120'

Intermediate: bow spring centralizers every 3rd joint or aprox 120'

Production: Hard bodied spiral centralizers every other joint or aprox 80' from TD to KOP then bow spring from KOP to 9 5/8" every forth joint or aprox 140'

WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS 38 Stages, 40 Shots per Stage **Received**

WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS _____ **Office of Oil & Gas**

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WERE TRACERS USED Yes No TYPE OF TRACER(S) USED _____

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Lithology/Formation	Top Depth in FT Name TVD	Bottom Depth in FT TVD	Top Depth in FT MD	Bottom Depth in FT MD	Describe rock type and record quantity and type of fluid (freshwater, brine, oil, gas, H2S, etc)
Sand/Shale/Silt	0	40			sand/shale/silt
Red Rock	40	120			red rock
Sand/Shale/Silt	120	2407			sand/shale/silt
Limestone	2407	2495			limestone
Big Injun	2495	2625			sandstone
Sand/Shale	2625	3140			sand/shale
Shale	3140	5140			shale
Grey Shale	5140	5488			shale
Shale	5488	5898			shale
Sandstone/Shale	5898	7754			shale/sandstone
Burkett	7754	7928	8152	8370	shale
Geneseo	7928	7974	8370	8434	shale
Tully	7974	8016	8434	8511	limestone
Hamilton	8016	8131	8511	8716	shale
Marcellus	8131	8187	8716	8861	shale
Cherry Valley	8187	8191	8861	8872	limestone
Lower Marcellus	8191		8872		shale

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CEMENT JOB REPORT



CUSTOMER NORTHEAST NATURAL ENER		DATE 12-NOV-14	F.R. # 1001117120	SERV. SUPV. Jason H Malheny										
LEASE & WELL NAME COASTAL 8H - API 47061016800000		LOCATION CLAY		COUNTY-PARISH-BLOCK Monongalia West Virginia										
DISTRICT Clarksburg		DRILLING CONTRACTOR RIG #		TYPE OF JOB Surface										
SIZE & TYPE OF PLUGS		LIST-CSG-HARDWARE		MECHANICAL BARRIERS		MD	TVD	HANGER TYPES		MD	TVD			
BJ Cement Plug, Rubber, Tcpl 13-3/8		Guide Shoe, Cement Nose 13-3/8 in												
MATERIALS FURNISHED BY BJ				LAB REPORT NO.				PHYSICAL SLURRY PROPERTIES						
								SACKS OF CEMENT	SLURRY WGT PPG	SLURRY YLD FT	WATER GPS	PUMP TIME HR:MIN	Bbl SLURRY	Bbl MIX WATER
WATER AHEAD/FLAKE								0	8.34	0	0	00:00	170	
GEL/FLAKE								0	8.56	0	0	00:00	25	
H2O								0	8.34	0	0	00:00	10	
PNE-1 + 2% CACL2								1,202	15.6	1.27	5.77	03:00	271.9	165.15
H2O								0	8.34	0	0	00:00	208.7	
1000# GEL								0	0	0	0	00:00	0	
400# SUGAR								0	0	0	0	00:00	0	
100# FLAKE								0	0	0	0	00:00	0	
1 TRP								0	0	0	0	00:00	0	
Available Mix Water		400 Bbl.		Available Displ. Fluid		400 Bbl.		TOTAL		685.6		165.15		
HOLE				TBG-CSG-D.P.				COLLAR DEPTHS						
SIZE	% EXCESS	DEPTH	ID	OD	WGT.	TYPE	MD	TVD	GRADE	SHOE	FLOAT	STAGE		
17.5	50	1425	12.62	13.375	54.5	CSG	1394	1394	J-55	1394	1350			
LAST CASING				PKR-CMT RET-BR PL-LINER				PERF. DEPTH		TOP CONN		WELL FLUID		
ID	OD	WGT	TYPE	MD	TVD	BRAND & TYPE	DEPTH	TOP	BTM	SIZE	THREAD	TYPE	WGT.	
24.	24	63.4	CSG	40	40	NO-PACKER	0	0	0	13.375	8RD	OTHER	0	
DISPL. VOLUME		DISPL. FLUID		CAL. PSI		CAL MAX PSI		OP. MAX		MAX TBG PSI		MAX CSG PSI		MIX WATER
VOLUME	UOM	TYPE	WGT.	BUMP PLUG	TO REV.	SQ. PSI	RATED	Operator	RATED	Operator			TANKS	
210	BBLs	H2O	8.34	481	0	0	0	0	2119	700				
EXPLANATION: TROUBLE SETTING TOOL, RUNNING CSG, ETC. PRIOR TO CEMENTING:														
PRESSURE/RATE DETAIL								EXPLANATION						
TIME HR:MIN.	PRESSURE - PSI		RATE BPM	Bbl. FLUID PUMPED	FLUID TYPE	SAFETY MEETING: BJ CREW <input checked="" type="checkbox"/> CO. REP. <input checked="" type="checkbox"/>								
	PIPE	ANNULUS				TEST LINES 2000 PSI								
18:00	0	0	0	0	0	CIRCULATING WELL - RIG <input type="checkbox"/> BJ <input checked="" type="checkbox"/>								
22:15	120	0	5.8	170	H2O/FLAK	ARRIVED ON LOCATION								
22:50	150	0	5.8	50	GEL/FLAK	WATER AHEAD								
23:00	120	0	5.8	10	H2O	PRE-FLUSH								
23:02	200	0	5.8		SLURRY	SPACER								
23:59	0	0	0	0	H2O	PNE-1 + 2% CACL2								
00:00	120	0	7	0	H2O	S/D RELEASE PLUG								
00:32	695	0	0	209	H2O	START DISPLACEMENT								
00:35	0	0	0	0	N/A	END DISPLACEMENT								
BLEED OFF/RIG OUT														
BUMPED PLUG	PSI TO BUMP PLUG	TEST FLOAT EQUIP.	BBL.CMT RETURNS/ REVERSED	TOTAL BBL. PUMPED	PSI LEFT ON CSG	SPOT TOP OUT CEMENT	SERVICE SUPERVISOR SIGNATURE:							
<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	500	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	60	699	0	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	Received Office of Oil & Gas OCT 07 2015							

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CEMENT JOB REPORT



CUSTOMER NORTHEAST NATURAL ENER	DATE 14-NOV-14	F.R. # 10011118060	SERV. SUPV. Scott J Carson
LEASE & WELL NAME COASTAL 8H - API 47061016800000	LOCATION BLACKSVILLE		COUNTY-PARISH-BLOCK Monongalia West Virginia
DISTRICT Clarksburg	DRILLING CONTRACTOR RIG #		TYPE OF JOB Intermediate

SIZE & TYPE OF PLUGS	LIST-CSG-HARDWARE	MECHANICAL BARRIERS	MD	TVD	HANGER TYPES	MD	TVD
BJ Cement Plug, Rubber, Top 9-5/8	Float Collar, AI Flap, 9-5/8 - 8rd Guide Shoe, Cement Nose, 9-5/8 i	NONE			NONE		

MATERIALS FURNISHED BY BJ	LAB REPORT NO.	PHYSICAL SLURRY PROPERTIES						Bbl SLURRY	Bbl MIX WATER	
		SACKS OF CEMENT	SLURRY WGT PPG	SLURRY YLD FT	WATER GPS	PUMP TIME HR:MIN				
PROCESSED WATER			8.34					210		
GEL/FLAKE			8.45					25		
H2O			8.34					10		
PREMIUM NE-1 2% CALCIUM	N/A	883	15.2	1.26	5.76	00:00		198	121.01	
H2O			8.34					206		
200# SUGAR ON SIDE			0					0		
Available Mix Water		500	Bbl.	Available Displ. Fluid		500	Bbl.	TOTAL	649	121.01

HOLE				TBG-CSG-D.P.						COLLAR DEPTHS		
SIZE	% EXCESS	DEPTH	ID	OD	WGT.	TYPE	MD	TVD	GRADE	SHOE	FLOAT	STAGE
12.25	30	2816	8.835	9.625	40	CSG	2761	2761	J-55	2761	2716	1

LAST CASING				PKR-CMT RET-BR PL-LINER				PERF. DEPTH		TOP CONN		WELL FLUID	
ID	OD	WGT.	TYPE	MD	TVD	BRAND & TYPE	DEPTH	TOP	BTM	SIZE	THREAD	TYPE	WGT.
13.	13.38	55.	CSG	1390	1390	NO PACKER				9.625	8RD	OTHER	0
18.	17.5		OPEN HOLE	1420	1420								

DISPL. VOLUME		DISPL. FLUID		CAL. PSI		CAL. MAX PSI		OP. MAX		MAX TBG PSI		MAX CSG PSI		MIX WATER
VOLUME	UOM	TYPE	WGT.	BUMP PLUG	TO REV.	SQ. PSI	RATED	Operator	RATED	Operator				TANK
206	BBLs	H2O	8.34	970	0	0	0	0	2816	1400				

EXPLANATION: TROUBLE SETTING TOOL, RUNNING CSG, ETC. PRIOR TO CEMENTING:

PRESSURE/RATE DETAIL					EXPLANATION	
TIME HR:MIN.	PRESSURE - PSI		RATE BPM	Bbl. FLUID PUMPED	FLUID TYPE	EXPLANATION
	PIPE	ANNULUS				
						SAFETY MEETING: BJ CREW <input checked="" type="checkbox"/> CO. REP. <input checked="" type="checkbox"/>
						TEST LINES 4150 PSI
						CIRCULATING WELL - RIG BJ <input checked="" type="checkbox"/>
11:00						ARRIVE ON LOCATION 11-14-2014
12:00						PRE-JOB RIG-IN SAFETY MEETING
12:15						RIG-IN
15:00						PRE-JOB SAFETY MEETING
15:26	120		5	5	H2O	LINE-FILL
15:28	0					BLEED-OFF HAD TO CHANGE RUBBER GASKET
15:39	0				H2O	PRESSURE TEST 4150#
15:41	120		5	0	PROCESS	WATER AHEAD
15:51	0					SHUT-DOWN ROCK-CATCHER FULL OF ROCKS
15:52	120		5		PROCESS	RESTART
16:21	0					SHUT-DOWN ROCK-CATCHER FULL
16:23	120		5		PROCESS	RESTART
16:31	0					SHUT-DOWN CHECK ROCK-CATCHER SWITCH TO FRESH WATER
16:33	120		5	235	H2O	RESTART
16:34	300		5.2	25	GEL/FLAK	PRE-FLUSH
16:40	300		5.3	10	H2O	SPACER

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PRESSURE/RATE DETAIL						EXPLANATION		
TIME HR:MIN.	PRESSURE - PSI		RATE BPM	Bbl. FLUID PUMPED	FLUID TYPE	SAFETY MEETING: BJ CREW <input checked="" type="checkbox"/> CO. REP. <input checked="" type="checkbox"/>		
	PIPE	ANNULUS				TEST LINES	4150 PSI	
16:42	320		5.2	198	SLURRY	CIRCULATING WELL - RIG <input type="checkbox"/> BJ <input checked="" type="checkbox"/>		
17:20	0					15.2# PREMIUM NE-1 2% CALCIUM		
17:21	600		6.5	209	H2O	SHUT-DOWN RELEASE-PLUG		
17:53	1380					START DISPLACEMENT		
17:56	0					SHUT-DOWN		
17:58	0					BLEED-OFF PRESSURE		
18:00						CLOSE-IN		
18:10						POST-JOB RIG-OUT SAFETY MEETING		
						RIG-OUT		

BUMPED PLUG	PSI TO BUMP PLUG	TEST FLOAT EQUIP.	BBL.CMT RETURNS/ REVERSED	TOTAL BBL. PUMPED	PSI LEFT ON CSG	SPOT TOP OUT CEMENT	SERVICE SUPERVISOR SIGNATURE:
<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	970	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	25	690	0	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	

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CEMENT JOB REPORT



CUSTOMER NORTHEAST NATURAL EN		DATE 25-MAR-15	F.R.# 10011146308	SERV. SUPV. Brian Lough									
LEASE & WELL NAME COASTAL #8H - API 47061016800000		LOCATION CLAY		COUNTY-PARISH-BLOCK Monongalia West Virginia									
DISTRICT Clarksburg		DRILLING CONTRACTOR RIG # PIONEER 63		TYPE OF JOB Long String									
SIZE & TYPE OF PLUGS	LIST-CSG-HARDWARE	MECHANICAL BARRIERS		MD	TVD	HANGER TYPES	MD	TVD					
Cement Plug, Rubber, Top 5-1/2 in	Float Collar, AI Flap, 5-1/2 - 8rd Guide Shoe, Cement Nose, 5-1/2												
PHYSICAL SLURRY PROPERTIES													
MATERIALS FURNISHED BY BJ	LAB REPORT NO.	SACKS OF CEMENT	SLURRY WGT PPG	SLURRY YLD FT	WATER GPS	PUMP TIME HR:MIN	Bbl SLURRY	Bbl MIX WATER					
UltraBond 10			13				50						
MultiBond			13				50						
50:50 Poz (Fly Ash):Class A		3,177	14.5	1.17	5.15		664.25	389.24					
Sugar Water before Plug			8.34				3						
Fresh Water			8.34				366.14						
Available Mix Water	750 Bbl.	Available Displ. Fluid	750 Bbl.	TOTAL			1133.34	389.24					
HOLE		TBG-CSG-D.P.					COLLAR DEPTHS						
SIZE	% EXCESS	DEPTH	ID	OD	WGT.	TYPE	MD	TVD	GRADE	SHOE	FLOAT	STAGE	
8.5	10	16520	4.778	5.5	20	CSG	16520	8200	P-110	16492	16482		
LAST CASING			PKR-CMT RET-BR PL-LINER			PERF. DEPTH		TOP CONN		WELL FLUID			
ID	OD	WGT	TYPE	MD	TVD	BRAND & TYPE	DEPTH	TOP	BTM	SIZE	THREAD	TYPE	WGT.
8.8	9.63	40	CSG	2762	2762					5.5	BUTT	SYNTHETIC MUD	12.5
DISPL. VOLUME		DISPL. FLUID		CAL. PSI	CAL. MAX PSI	OP. MAX	MAX TBG PSI		MAX CSG PSI		MIX WATER		
VOLUME	UOM	TYPE	WGT.	BUMP PLUG	TO REV.	SQ. PSI	RATED	Operator	RATED	Operator			
366.1	BBLS	Fresh Water	8.34	400C	0	0	0	0	10112	500C	TANK		

EXPLANATION: TROUBLE SETTING TOOL, RUNNING CSG, ETC. PRIOR TO CEMENTING:

PRESSURE/RATE DETAIL					EXPLANATION	
TIME HR:MIN.	PRESSURE - PSI		RATE BPM	Bbl. FLUID PUMPED	FLUID TYPE	SAFETY MEETING: BJ CREW <input checked="" type="checkbox"/> CO. REP. <input checked="" type="checkbox"/>
	PIPE	ANNULUS				
						TEST LINES 730C PSI
						CIRCULATING WELL - RIG <input checked="" type="checkbox"/> BJ <input checked="" type="checkbox"/>
23:45						ARRIVE ON LOCATION. JOB TIME MIDNIGHT
00:50						SPOT EQUIPMENT
01:05						SAFETY MEETING WITH BHI CREW
01:26						RIG IN TO WELL & TANKS
03:30						SAFETY MEETING WITH RIG CREW & CO.MAN
03:45						RIG IN HEAD & MANIFOLD & WASH LINES
04:26	800		5.3	5	H2O	LINE FILL
04:28	0		1	1	H2O	PRESSURE TEST TO 7300 PSI
04:31	760		5.5	50	PREFLUS	ULTRABOND
04:40	925		5.5	46	PREFLUS	MULTIBOND
04:49	386		5.5	640	CEMENT	3177 SACKS OF CLASS A 50/50 POZ+ .3% R-3+.2% MPA-170. TEMP WAS 55 DEGREES F
06:48	0		6	10	H2O	SHUT DOWN / FLUSH LINES
06:51	500		5	3	H2O	SUGAR WATER WITH 50 LBS OF SUGAR
06:53	0		0	0		SHUT DOWN / DROP PLUG
06:55	450C		6	379	H2O	DISPLACE WITH FRESH WATER
08:00	402C		2.5		H2O	SLOW RATE TO LAND PLUG
08:05	470C		2.5		H2O	LAND PLUG
08:12	0					

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PRESSURE/RATE DETAIL						EXPLANATION	
TIME HR:MIN.	PRESSURE - PSI		RATE BPM	Bbl. FLUID PUMPED	FLUID TYPE	SAFETY MEETING: BJ CREW <input checked="" type="checkbox"/> CO. REP. <input checked="" type="checkbox"/>	
	PIPE	ANNULUS				TEST LINES 730C PSI	
						CIRCULATING WELL - RIG <input checked="" type="checkbox"/> BJ <input checked="" type="checkbox"/>	
						RELEASE PRESSURE TO PUMPER. 6.2 BBL H2O RETURN TO PUMPER ON RELEASE	
08:14						10 BBL CEMENT RETURN TO SURFACE. END JOB	

BUMPED PLUG	PSI TO BUMP PLUG	TEST FLOAT EQUIP.	BBL.CMT RETURNS/ REVERSED	TOTAL BBL. PUMPED	PSI LEFT ON CSG	SPOT TOP OUT CEMENT	SERVICE SUPERVISOR SIGNATURE:
<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	4025	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	10	1119	0	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	

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Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	6/27/2015
Job End Date:	7/9/2015
State:	West Virginia
County:	Monongalia
API Number:	47-061-01680-00-00
Operator Name:	Northeast Natural Energy LLC
Well Name and Number:	Coastal 8H
Longitude:	-80.20460700
Latitude:	39.70548700
Datum:	NAD83
Federal/Tribal Well:	NO
True Vertical Depth:	8,253
Total Base Water Volume (gal):	13,402,116
Total Base Non Water Volume:	0



Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Proppant Transport	Schlumberger	Corrosion inhibitor, Scale inhibitor, Biocide, AntiFoam Agent, Acid, Friction Reducer, Iron Control Agent, Fluid Loss Additive, Propping Agent	Water (Including Mix Water Supplied by Client)* Quartz, Crystalline silica Hydrochloric acid Ammonium sulfate Acrylamide, 2-acrylamido-2-methylpropanesulfonic acid, sodium salt polymer Glutaraldehyde Phenolic resin Polymer of 2-acrylamido-2-methylpropanesulfonic acid sodium salt and methyl acrylate Polypropylene glycol	NA 14808-60-7 7647-01-0 7783-20-2 38193-60-1 111-30-8 9003-35-4 136793-29-8 25322-69-4	98.91996 0.61090 0.18463 0.13627 0.03839 0.02674 0.01460 0.01341	87.12754 12.73343 0.07864 0.02377 0.01754 0.00494 0.00344 0.00188 0.00173	

Ingredients shown above are subject to 29 CFR 1910.1200(i) and appear on Material Safety Data Sheets (MSDS). Ingredients shown below are Non-MSDS.

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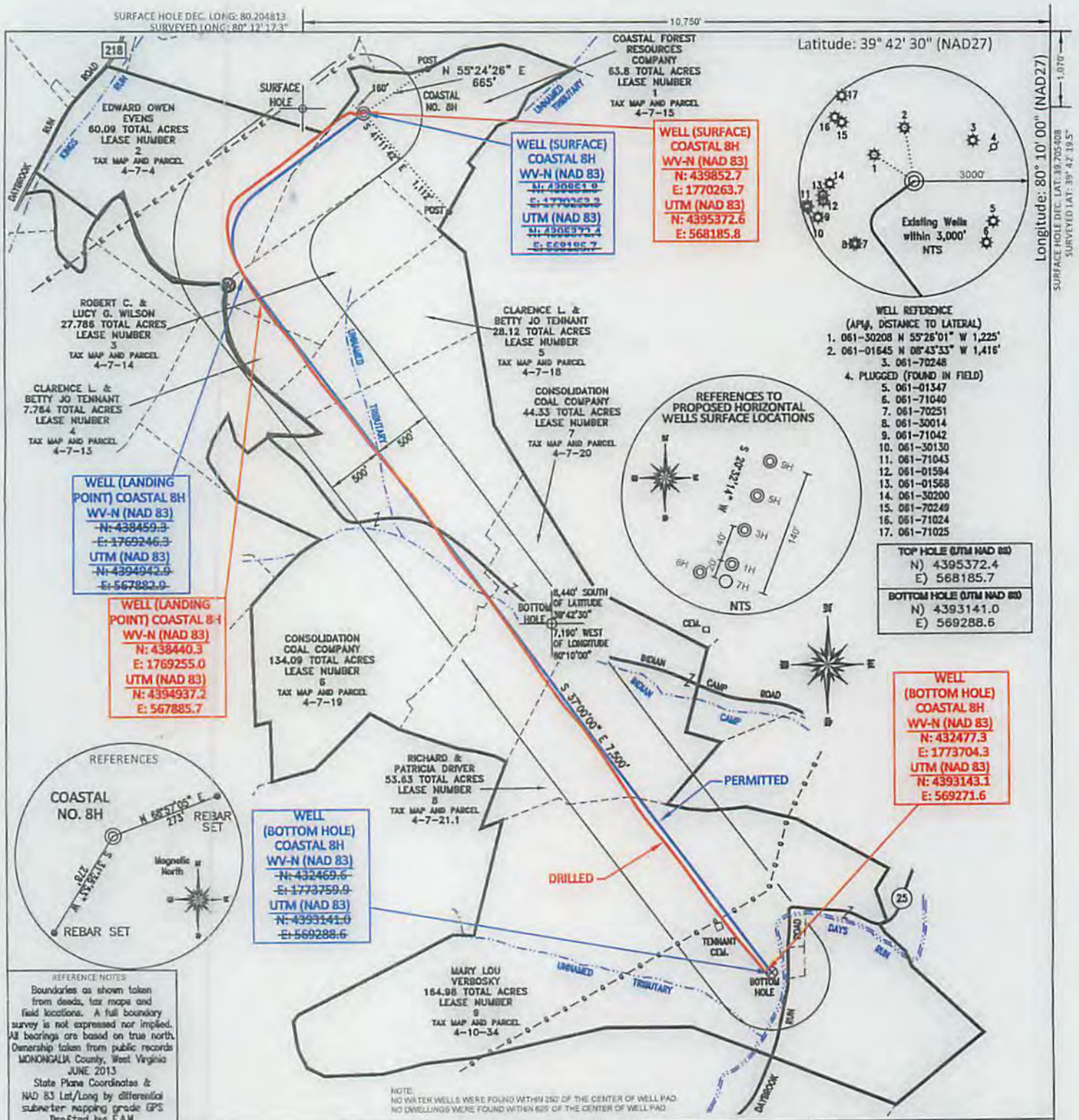
	Ethanol, 2,2',2''-nitrioltris-, 1,1',1''-tris(dihydrogen phosphate), sodium salt	68171-29-9	0.00920	0.00118
	Urea	57-13-6	0.00896	0.00115
	Alkyl(C12-16)dimethylbenzyl ammonium chloride	68424-85-1	0.00686	0.00088
	Sodium erythorbate	6381-77-7	0.00401	0.00052
	Trisodium ortho phosphate	7601-54-9	0.00404	0.00052
	Methanol	67-56-1	0.00244	0.00031
	Sodium sulfate	7757-82-6	0.00209	0.00027
	Silicon Dioxide	7631-86-9	0.00187	0.00024
	Fatty acids, tall-oil	51790-12-3	0.00143	0.00018
	Thiourea, polymer with formaldehyde and 1-phenylethanone	68527-49-1	0.00118	0.00015
	Ethylene Glycol	107-21-1	0.00115	0.00015
	Ethanol	64-17-5	0.00082	0.00011
	Alcohols, C14-15, ethoxylated (7EO)	68951-67-7	0.00056	0.00007
	2-propanamid	79-06-1	0.00045	0.00006
	Propargyl alcohol	107-19-7	0.00037	0.00005
	Tetrasodium ethylenediaminetetraacetate	64-02-8	0.00023	0.00003
	Hexadec-1-ene	629-73-2	0.00012	0.00002
	Dimethyl siloxanes and silicones	63148-62-9	0.00013	0.00002
	1-Octadecene (C18)	112-88-9	0.00006	0.00001
	Decamethyl cyclopentasiloxane	541-02-6	0.00001	
	Octamethylcyclotetrasiloxane	556-67-2	0.00001	
	Formaldehyde	50-00-0	0.00001	
	Dodecamethylcyclohexasiloxane	540-97-6	0.00001	
	Copper(II) sulfate	7758-98-7	0.00001	
	Siloxanes and silicones, dimethyl, reaction products with silica	67762-90-7	0.00002	

* Total Water Volume sources may include fresh water, produced water, and/or recycled water

** Information is based on the maximum potential for concentration and thus the total may be over 100%

Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided. Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)

Received
Office of Oil & Gas
OCT 07 2015



REFERENCE NOTES
 Boundaries as shown taken from deeds, tax maps and field locations. A full boundary survey is not expressed nor implied. All bearings are based on true north. Ownership taken from public records MONONGALIA County, West Virginia JUNE 2013
 State Plane Coordinates & NAD 83 Lat/Long by differential submeter mapping grade GPS drafted by EAM

I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.



FILE #: NNE12
 DRAWING #: 2351
 SCALE: PLAT: 1" = 1200', TICK: 1" = 2000'
 MINIMUM DEGREE OF ACCURACY: 1/200
 PROVEN SOURCE OF ELEVATION: SUBMETER MAPPING GRADE GPS

Signed: *[Signature]*
 L.L.S. #2124: Ernest J. Benchek III

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS
WVDEP OFFICE OF OIL & GAS
 601 57TH STREET
 CHARLESTON, WV 25304

Well Type: Oil Waste Diposal Production Deep
 Gas Liquid Injection Storage Shallow

WATERSHED: DUNKARD CREEK ELEVATION: 1,420'
 COUNTY/DISTRICT: MONONGALIA / CLAY QUADRANGLE: BLACKSVILLE, WV
 SURFACE OWNER: COASTAL FOREST RESOURCES COMPANY ACREAGE: 63.8 +/- 10/30/2015
 OIL & GAS ROYALTY OWNER: WACO OIL AND GAS, ET AL ACREAGE: 584.59 +/-
 LEASE NUMBERS: _____

DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE
 PLUG OFF FORMATION PERFORATE NEW FORMATION PLUG & ABANDON
 CLEAN OUT & REPLUG OTHER CHANGE (SPECIFY): _____

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: TVD: 8,242.03' TMD: 16,520'
 WELL OPERATOR: NORTHEAST NATURAL ENERGY LLC DESIGNATED AGENT: JOHN ADAMS
 ADDRESS: 707 VIRGINIA STREET EAST, SUITE 1200 ADDRESS: 707 VIRGINIA STREET EAST, SUITE 1200
 CITY: CHARLESTON STATE: WV ZIP CODE: 25301 CITY: CHARLESTON STATE: WV ZIP CODE: 25301

DATE: OCTOBER 5, 2015
 OPERATOR'S WELL #: COASTAL NO. 8H AS-DRILLED
 API WELL #: 47 61 01680 H6A
 STATE COUNTY PERMIT